



**COMMONWEALTH OF MASSACHUSETTS  
EXECUTIVE OFFICE OF ENVIRONMENTAL AFFAIRS  
DEPARTMENT OF ENVIRONMENTAL PROTECTION**

ONE WINTER STREET, BOSTON, MA 02108 617-292-5500

**MITT ROMNEY**  
Governor

**KERRY HEALEY**  
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**STEPHEN R. PRITCHARD**  
Secretary

**ROBERT W. GOLLEDGE, Jr.**  
Commissioner

June 6, 2006

Via e-mail and US Mail  
Mark Flaherty, Superintendent  
Medway Water & Sewer Department  
155 Village Street  
Medway, MA 02053

**Medway**  
Medway Water & Sewer Department  
PWS ID # 2177000  
Water Management Act Amendment  
Permit 9P4-2-20-177.01  
Transmittal #026689

Dear Mr. Flaherty:

Please find attached the following:

- Findings of Fact in Support of the Amended Permit Decision; and,
- Amended Water Management Act Permit #9P4-2-20-177.01 for the Town of Medway, Massachusetts.

Please note that the signature on this cover letter indicates formal issuance of the attached document. If you have any questions concerning this letter, please contact Duane LeVangie at 617-292-5706 or e-mail at [Duane.LeVangie@state.ma.us](mailto:Duane.LeVangie@state.ma.us).

Sincerely,

Glenn Haas  
Director, Watershed Management Division  
Bureau of Resource Protection

Enclosures

Cc: Paul Anderson, Drinking Water Chief-DEP-CERO  
Barbara Kickham, WMA, DEP-CERO  
Duane LeVangie, WMA Manager Boston  
Dana Samuelson, Permit Coordinator, DEP-CERO (cover)  
Greg Balukonis, Town Administrator, 155 Village Street, Medway, MA 02053  
Bob Pickering, Haley & Ward, Inc., 25 Fox Rd., Waltham, MA 02451-1066  
Margaret Van Duesen, Charles River Watershed Association, 190 Park Road, Weston MA 02493

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Y:\DWP Archive\CERO\Medway-Permit #9P4-2-20-177.01-WMA-2006-6-06

This information is available in alternate format. Call Donald M. Gomes, ADA Coordinator at 617-556-1057. TDD Service - 1-800-298-2207.

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## **Communication for Non-English Speaking Parties (310 CMR 1.03(5)(a))**

English

This document is important and should be translated immediately.

Spanish

*Este documento es importante y se debe traducir inmediatamente.*

Portuguese

*Este original é importante e deve ser traduzido imediatamente.*

Italian

*Questo documento è importante e dovrebbe essere tradotto immediatamente.*

Greek

Αυτό το έγγραφο είναι σημαντικό και πρέπει να μεταφραστεί αμέσως.

French

*Ce document est important et devrait être traduit immédiatement.*

Chinese (traditional)

這個文件重要和應該立刻被翻譯。  
这个文件重要和应该立刻被翻译。

## **Findings of Fact in Support of the Amended Permit Decision Water Management Permit # 9P4-2-20-177.01**

The Massachusetts Department of Environmental Protection (the Department) has completed its review of the Town of Medway's (Medway) Water Management Act permit amendment application to add a new withdrawal location for the authorized withdrawal from the Charles River Basin. With the addition of the Industrial Road Well, Medway will have more flexibility in the operation of all its groundwater sources.

### **Medway's Water Withdrawal History**

Medway is registered for an average annual daily withdrawal volume of 0.72 million gallons per day (MGD). Medway began reporting withdrawal volumes in excess of its registered volume in 1993. Medway has been in discussions with the Department since 1995 concerning the need for a Water Management Act permit. In 1995, Medway also began discussions with the Department of Environmental Management (DEM) to obtain updated water use projections. The Department requires water use projections that are accurate, uniform and standardized as part of the Water Management Act permit application process, and DEM water use projections are the water use projections used by the Department in issuing Water Management permits to public water suppliers.

In 2002, Medway entered into an Administrative Consent Order with the Department, which required that Medway seek a permit under the Water Management Act MGL c 21G (the Act) because water withdrawals were over the registered volume of 0.72 MGD. The highest withdrawal volumes reported were 1.15 MGD in 1997 and in 1999. However, DEM could not develop new demand projections needed for a permit because of concerns about the accuracy of Medway's water withdrawal data during the 1990's. In 1999, Medway installed a second set of master meters at its recently constructed corrosion control facility. The new meters indicated that the original master meters at the wells had been significantly over-reading the water withdrawals due to drops in well yields. In addition to new master meters, leak detection surveys were conducted in 1999 and 2002 reducing unaccounted-for-water to the current reported 9.7%. A full leak detection survey was conducted in June 2004. Overall, Medway's reported water withdrawals have declined to a low of 0.89 MGD in 2003 and then increased slightly to 0.93 MGD in 2004. Medway's initial Water Management Permit was issued on April 20, 2004.

Medway applied for an amendment to their permit in order to add the newly developed Industrial Road Well as an approved withdrawal point. In response to Medway's application for an amended permit to withdraw water from the Charles River Basin, and after reviewing the information that Medway has provided, the Department hereby approves the Water Management Act Permit #9P4-2-20-177.01 (the Permit) in accordance with the Act. The Department makes the following Findings of Fact in support of the attached Permit, and includes herewith its reasons for approving the Permit and for conditions of approval imposed, as required by MGL c 21G, s 11 and 310 CMR 36.00.

### **The Water Management Act**

The Act requires that the Department issue permits that balance a variety of factors including:

- Reasonable protection of existing water uses, land values, investments and enterprises;
- Reasonable conservation consistent with efficient water use;
- Reasonable protection of public drinking water supplies, water quality, wastewater treatment capacity, waste assimilation capacity, groundwater recharge areas, navigation, hydropower resources, water-based recreation, wetland habitat, fish and wildlife, agriculture, flood plains; and
- Reasonable economic development and job creation.

The Department has determined that there is documented evidence that water withdrawals and, to a lesser extent, an increase in development and impervious area, combined with the export of wastewater to other basins, substantially contribute to low flow in the Charles River and its tributaries. These low flows impact the ability of the river and its tributaries to adequately serve all of the competing uses described in the Act.

To better achieve the balance of competing water uses mandated by the Act, the Department has adopted the “Water Management Policy For Permit and Permit Amendment Applications and 5-Year Review, Effective Date: April 2, 2004” and the “Guidance Document for Water Management Act Permitting Policy, Effective Date: January 17, 2006”. The Policy, WMA Policy #: BRP/ DWM/DW/P04-1, and Guidance, Guidance #BRP/DWM/DW/G05-01, can be found on the Department’s web site at <http://www.mass.gov/dep/water/laws/policies.htm#wmgt>. The Policy and Guidance identify specific performance standards and conditions to be applied to new Water Management permits and to existing permits at the time they are amended, during 5-year permit review or permit renewal. The Department has applied these performance standards and conditions in Medway’s permit.

### **Findings of Fact for the Performance Standards in Medway’s Water Management Permit**

As required by MGL c 21G, s 11 and 310 CMR 36.00, the Department makes the following Findings of Fact in support of the Permit, and includes herewith its reasons for approving the Permit and for imposing the conditions of approval.

In determining the performance standards in Water Management permits, the Department relies primarily upon the stressed basin determinations contained in the Water Resources Commission’s (WRC) Stressed Basins Report approved December 13, 2001, and upon future revisions to these stressed basin determinations by the WRC. The Department also conducts reviews of other available research and reports by the United States Geological Survey, the Department’s 303/305 Water Quality Assessment Reports and any other pertinent reports available for specific river basins.

Medway’s sources are located in the Charles River Basin, which is identified as a medium stress basin by the WRC’s Stressed Basins Report. The map of stressed basins can be reviewed at the following link:<http://www.mass.gov/dep/brp/wtrm/files/stresmap.htm>. The Policy and Guidance establish the following performance standards for all permittees that withdraw water from medium stressed river basins:

1. Residential gallons per capita day water use (RGPCD) of 65 gallons or less;
2. Unaccounted for water (UAW) of 10% or less;
3. Summer Limits on Withdrawals implemented through a calendar trigger or a streamflow trigger; and
4. Offset Feasibility Studies<sup>1</sup> for permittees that exceed the baseline withdrawal volume (Baseline) established for each permittee.

Baseline withdrawal is the volume withdrawn in compliance with the Act during the calendar year prior to the effective date of the permit, the average volume withdrawn in compliance with the Act during the three (3) years prior to the effective date of the permit, or the registered volume, whichever is greater.

Medway’s Baseline is 0.99 MGD, the withdrawal volume reported on the Annual Statistical Report (ASR) for 2005.

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<sup>1</sup> As of January 17, 2006, the Department has convened a work group to develop specific guidelines for implementing the offset requirements. The work group’s final report is anticipated within one year. In the meantime, the Department will consider crediting against a permittee’s future offset obligations measures implemented under this permit that return water to the basin from which it was withdrawn or prevent water loss from the basin.

The performance standards of 65 gallons per day or less for residential per capita water use and 10% or less for unaccounted for water are taken from the Water Resources Commission performance standards for effective water conservation for public water suppliers. The Department believes these standards are reasonable based on studies and data developed throughout the country, the 1996 AWWA Leak Detection and Water Accountability Committee report on water accountability (AWWA Journal; July 1996; pp. 108-111), and the fact that the average values in 2004 for Massachusetts were 67 RGPCD, and 13% UAW. While these performance standards represent the minimum standards required for compliance with the Permit, the Department believes that they are reasonable standards for effective water conservation and that through the implementation of all the terms and conditions of Water Management permits, permittees can exceed the performance standards for RGPCD and UAW.

The Guidance, which has been revised since the original April 2004 Guidance used in Medway's permit issued on April 21, 2004, also provides implementation and enforcement guidelines for permitting. It establishes:

- timelines for compliance with the performance standards;
- procedures and requirements for permittees that fail to document compliance with the performance standards within those timelines;
- enforcement margins and enforcement forbearance that the Department will employ for permittees in high and medium stress basins.

In order to be eligible to receive enforcement forbearance, a permittee must:

- demonstrate in its ASR for the second full calendar year following the permit's effective date, and in subsequent ASRs, that it has not exceeded the enforcement margin(s);
- comply with all required compliance plans;
- file all ASRs and compliance plans in a timely manner; and
- continue to make demonstrable progress toward meeting the performance standard.

In High or Medium stressed basins as defined by the WRC, the Department will employ a RGPCD enforcement margin of between 66 and 72 gallons. Therefore, if Medway fails to comply with the 65 RGPCD performance standard by December 31, 2008, but does not exceed 72 RGPCD, it will be within the enforcement margin. The Department will also employ an enforcement margin should UAW water losses fall between 10% and 15% of overall water use. Therefore, if Medway fails to comply with the 10% RGPCD performance standard by December 31, 2008, but does not exceed 15% UAW, it will be within the enforcement margin.

The Department commends Medway for the work done to date towards meeting the Charles River Basin performance standards included in the April 2004 Water Management Permit. If average day demand remains at or below the Baseline value of 0.99 MGD, an offset feasibility study will not be required.

### **Findings of Fact for Specific Permit Conditions**

In issuing permits, the Department looks primarily at site-specific impacts and other issues specific to the system, such as impacts to nearby streams, wetlands, or other water users, justification of long-term demand projections and the capacity of permitted withdrawal points. The conditions are intended to ensure the efficient use of water and to mitigate the potential impact of withdrawals.

**Special Conditions 1, Maximum Authorized Annual Average Withdrawal Volume**, reflects the registered withdrawal volume of 0.72 MGD and a permitted increase of 0.29 MGD for a total authorized withdrawal of 1.01 MGD through February 28, 2009. Water use above 0.99 MGD for Medway will require offsets if feasible.

The additional authorized withdrawal volume is based on water use projections prepared by the Department of Conservation and Recreation, Office of Water Resources (formerly DEM).

**Special Condition 2, Maximum Authorized Daily Withdrawals from each Withdrawal Point**, reflects the volume revisions to groundwater withdrawal rates by source, according to the Department approved Zone II rates. The Permit includes the Zone II approved rate of 0.475 MGD for the Industrial Rd. Well. The Zone II approved rate for the Populatic Well is 0.87 MGD, for Oakland Ave. Well is 0.59 MGD, and for Village St. is 0.66 MGD. The combined daily maximum approved rate is 2.6 MGD; however, the Department is aware that diminished withdrawal capacity has limited the withdrawal from the Populatic, Oakland, and Village Wells. The Village St. Well is down 200 gpm in capacity and cannot be rehabilitated to original production. The Populatic Well cannot be cleaned due to well construction problems.

**Special Condition 3, Zone of Contribution Delineations**, requirement has been met and no further delineations are required as a condition of this permit.

**Special Condition 4, Wellhead Protection**, requires that Medway amend the Wellhead Protection Bylaw to include the Zone II of the Industrial Rd. Well and to demonstrate Best Effort for that portion of the Zone II that enters the Town of Millis prior to receiving approval to place that well in operation.

**Special Condition 5, Performance Standard for Residential Gallons Per Capita Day Water Use**, discussed previously.

**Special Condition 6, Performance Standard for Unaccounted for Water**, discussed previously.

**Special Condition 7, Summer Limits on Withdrawals**, addresses limits on nonessential outside water use from May through September. Medway has instituted stricter summer outdoor water use restrictions that have been incorporated into the permit as Attachment A. Under this Permit, Medway may implement the restrictions in Attachment A to limit summer water withdrawals. Medway has decreased summer demand through the imposition of mandatory water use restrictions from April 1 to November 1. Mandatory restrictions have been in place since 2002. Only hand held watering has been allowed during times of low streamflow. Medway has demonstrated enforcement of the water conservation restrictions through the issuance of 29 citations and fines.

Medway is to continue to implement and enforce the restrictions on summer withdrawals that were in effect during the summer of 2005, for the summer of 2006 in advance of the adoption and implementation of any new restrictions adopted in response to this condition.

**Special Condition 8, Water Withdrawals that Exceed Baseline Withdrawal Volumes**, discussed previously.

**Special Condition 9, Water Conservation Requirements**, incorporates the Water Conservation Standards for the Commonwealth of Massachusetts reviewed and approved by the WRC in October 1992.

**Special Condition 10, Requirement to Report Raw and Finished Water Volumes**, ensures that the information necessary to evaluate compliance with the conditions included herein is accurately reported.

The summary of permit conditions above as part of the Department's findings of fact is not intended to, and should not be construed as, modifying any of the Permit conditions. In the event of any ambiguity between the summary and the actual permit conditions, the Permit language shall be controlling.



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Commissioner

**WATER WITHDRAWAL PERMIT**  
**MGL c 21G**

This permit is issued pursuant to the Massachusetts Water Management Act (the Act) for the sole purpose of authorizing the withdrawal of a volume of water as stated herein and subject to the following special and general conditions. This permit conveys no right in or to any property beyond the right to withdraw the volume of water for which it is issued.

**PERMIT NUMBER:** 9P4-2-20-177.01      **RIVER BASIN:** Charles

**PERMITTEE:** Town of Medway  
155 Village St.  
Medway, MA 02053

**ORIGINAL ISSUANCE DATE:** April 21, 2004

**MODIFICATION DATE:** June 6, 2006

**EXPIRATION DATE:** February 28, 2009

**NUMBER OF WITHDRAWAL POINTS:** 4

Groundwater: 4

**USE:** Public Water Supply

**DAYS OF OPERATION:** 365

**LOCATION(S):**

**Table 1: Withdrawal Point Identification**

Well Name	PWS Source ID Code
Populatic St. Well	2177000-01G
Oakland St. Well	2177000-02G
Village St. Well	2177000-03G
Industrial Rd. Well	2177000-04G

This information is available in alternate format. Call Donald M. Gomes, ADA Coordinator at 617-556-1057. TDD Service - 1-800-298-2207.

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## **SPECIAL CONDITIONS**

### **1. Maximum Authorized Annual Average Withdrawal Volume**

This permit authorizes the Town of Medway (Medway) to withdraw water from the Charles River Basin at the rate described below. The volume reflected by this rate is in addition to the 0.72 million gallons per day previously authorized to Medway under Water Management Act Registration #220177.01 for withdrawal from the Charles River Basin. The permitted volume is expressed both as an annual average daily withdrawal rate (million gallons per day or MGD), and as a total annual withdrawal volume (million gallons per year or MGY) for each five-year period of the permit term.

The Department of Environmental Protection (the Department) will use the raw water withdrawal volume from all authorized withdrawal points to assess compliance with the registered and permitted withdrawal volumes.

**Table 2: Maximum Authorized Withdrawal Volumes**

5-Year Periods		Total Raw Water Withdrawal Volumes			
		Permit		Permit + Registration	
		Daily Average (MGD)	Total Annual (MGY)	Daily Average (MGD)	Total Annual (MGY)
Period One Years 2-5	12/21/1990 to 2/28/1994	No permit	No permit	0.72	262.8
Period Two Years 6-10	3/1/1994 to 2/28/1999	No permit	No permit	0.72	262.8
Period Three Years 11-15	3/1/1999 to 2/29/2004	No permit	No permit	0.72	262.8
Period Four Years 16-20	3/1/2004 to 2/28/2009*	0.29	105.85	1.01	368.65

\* Medway's initial permit under the Act was issued on April 20, 2004.

The baseline withdrawal for the purpose of triggering "Special Condition 8. Water Withdrawals that Exceed Baseline Withdrawal Volumes" is 0.99 MGD, or 361.35 MGY.

### **2. Maximum Authorized Daily Withdrawals from each Withdrawal Point**

Withdrawals from individual withdrawal points are not to exceed the approved maximum daily volumes listed below without specific advance written approval from the Department. The authorized maximum daily volume is the approved rate of each source. In no event shall the combined withdrawals from the individual withdrawal points exceed the withdrawal volumes authorized above in Special Condition 1.

**Table 3: Maximum Daily Withdrawal Volumes**

Well Name	PWS Source ID Code	Maximum Daily Rate (MGD)
Populatic Well	2177000-01G	0.87
Oakland St. Well	2177000-02G	0.59
Village St. Well	2177000-03G	0.66
Industrial Rd. Well	2177000-04G	0.475



### 3. Zone of Contribution Delineations

Department records show that the Populatic Well (01G), Oakland St. Well (02G), Village St. Well (03G), and Industrial Rd. Well (04G) have DEP approved Zone II delineations. No further Zone II work is required as a condition of this permit.

### 4. Wellhead Protection

Medway's Wellhead Protection Bylaw must be amended to include the **Industrial Road Well (2177000-04G)** to fulfill the requirements of the Department's Wellhead Protection Regulations, 310 CMR 22.21(2). The Town must demonstrate Best Effort for that portion of the Zone II that is within the Town of Millis. The final text of the control measures and the Best Effort letters must be submitted to the Wellhead Protection Program in Boston **prior to receiving approval to place the well in operation.**

### 5. Performance Standard for Residential Gallons Per Capita Day Water Use

Medway's Performance Standard for Residential Gallons Per Capita Day (RGPCD) is 65 gallons. Medway shall be in compliance with the Performance Standard by December 31, 2008. Medway shall report its RGPCD water use annually in its Annual Statistical Report (ASR) and document compliance with this Performance Standard in its ASR for 2008 and each year thereafter.

Medway shall report its RGPCD and the calculation used to derive that figure as part of its ASR including, without limitation, the source of the data used to establish the service population and the year in which this data was developed.

See Appendix A for additional information on the requirements if the Performance Standard for RGPCD is not met.

### 6. Performance Standard for Unaccounted for Water

Medway's Performance Standard for Unaccounted for Water (UAW) is 10% of overall water withdrawal. Medway shall be in compliance with the Performance Standard by December 31, 2008. Medway shall report its UAW annually in its Annual Statistical Report (ASR) and document compliance with this Performance Standard in its ASR for 2008 and each year thereafter.

Medway shall report its UAW and the calculation used to derive that figure as part of its ASR. UAW is defined as the difference between water pumped or purchased and water that is metered or confidently estimated. UAW shall include, without limitation, water that cannot be accounted for due to meter problems, unauthorized hydrant openings, unavoidable leakage, recoverable leakage, illegal connections, stand pipe overflows, and fire protection where it cannot be confidently estimated. The need for water main flushing and the use of water in construction or meter calibration shall be metered or estimated as appropriate to assist in determining actual demand. Volumes flushed to waste shall be reported on Medway's ASR.

See Appendix B for additional information on requirements if the Performance Standard for UAW is not met.

## 7. Summer Limits on Withdrawals

Medway shall limit summer water withdrawals by implementing one of the following two options or by implementing the summer water use restrictions developed by the Town and included in Attachment A. Nothing in this permit shall prevent Medway from implementing restrictions stricter than those set forth in Options 1 and 2 or Attachment A. Any variations to the restrictions in Attachment A must receive prior approval from the Department.

**Table 4: Options for Summer Limits on Withdrawals**

<u><b>Option 1: Calendar Trigger</b></u>	<u><b>Option 2: Stream Flow Trigger</b></u>
<p>At a minimum, implement the following restrictions on nonessential outdoor water use between May 1<sup>st</sup> and September 30<sup>th</sup>.</p> <ul style="list-style-type: none"><li>• No nonessential outdoor water use allowed, except that sprinklers may be used for lawn watering outside the hours of 9 AM to 5 PM up to <b>two (2)</b> days per week.</li><li>• Upon the declaration of a drought level of “Watch” (or higher drought designation) by the Massachusetts Drought Management Task Force for the region in which Medway’s withdrawal source(s) is located*, the restrictions set forth in Option 2 must be implemented and remain in place until the drought level is returned to “Advisory” or “Normal”.</li></ul>	<p>At a minimum, implement the following restrictions on nonessential outdoor water use whenever stream flow falls below a mean daily streamflow of 0.50 cubic feet per second per square mile (cfsm) for <b>three (3)</b> consecutive days between May 1<sup>st</sup> and September 30<sup>th</sup>. Stream flow shall be measured at the USGS Charles River Gauge Station at Medway #01103280 (Medway Gauge)**. At the Medway Gauge, 0.50 cfsm is equal to 32.9 cubic feet per second (cfs).</p> <ul style="list-style-type: none"><li>• No nonessential outdoor water use allowed, except that sprinklers may be used for lawn watering outside the hours of 9 AM to 5 PM <b>one (1)</b> day per week.</li><li>• Once implemented, the restrictions shall remain in place until streamflow at the Medway Gauge meets or exceeds 0.50 cfsm (32.9 cfs) for <b>seven (7)</b> consecutive days.</li></ul>

\*This information is available at <http://www.mass.gov/dcr/waterSupply/rainfall/drought.htm>.

\*\*Gauge readings can be accessed at <http://waterdata.usgs.gov/ma/nwis/current/?type=flow>. See Appendix C for more detailed instructions on accessing mean daily streamflows for the Medway Gauge.

As used herein, “nonessential outdoor water use” includes uses that are not required:

- (a) for health or safety reasons;
- (b) by regulation;
- (c) for the production of food and fiber;
- (d) for the maintenance of livestock; or
- (e) to meet the core functions of a business.

For additional guidance on nonessential outdoor water use, see Appendix C.

If Medway chooses Option 1 above, the required restrictions shall be and implemented and enforced starting no later than May 1, 2007<sup>2</sup>. If Medway chooses Option 2 above, the required restrictions shall be implemented and enforced when streamflow falls below the minimum after May 1, 2007. If Medway chooses Attachment A, the required restrictions shall be and implemented and enforced starting no later than April 1, 2007.

Medway shall document its compliance with the summer limits on withdrawal requirements annually in its ASR for 2006, and each year thereafter.

**Option 1: Calendar Trigger - or -  
Attachment A: Town Water Use Restrictions**

If Medway chooses **Option 1: Calendar Trigger**, then Medway shall notify its customers each year by April 15<sup>th</sup> of the restrictions and the consequences for failing to adhere to the restrictions.

If Medway chooses **Attachment A: Town Water Use Restrictions**, then Medway shall notify its customers each year by March 15<sup>th</sup> of the restrictions and the consequences for failing to adhere to the restrictions.

Notice must include:

- the need to limit water use, especially nonessential outdoor water use, to protect streamflow for aquatic life and to ensure a sustainable drinking water supply;
- ways individual homeowners can limit water use, especially nonessential outdoor water use;
- a detailed description of the restrictions and penalties for violating the restrictions.

Notice that restrictions have been put in place shall be filed each year with the Department within 14 days of the restriction's effective date. Filing shall be in writing on the Water Use Restrictions Form at <http://www.mass.gov/dep/water/approvals/wmgforms.htm#conserve>.

**Option 2: Stream Flow Trigger**

If Medway chooses **Option 2: Stream Flow Trigger**, when streamflow falls below 0.50 cfs (32.9 cfs at the Medway Gauge) for three (3) consecutive days, Medway shall notify its customers as soon as possible, and in any event no more than three days after the stream flow trigger has been reached, of the restrictions and the consequences for failing to adhere to the restrictions. Notice must include:

- the streamflow value triggering the required notification;
- the need to limit water use, especially nonessential outdoor water use, to protect streamflow for aquatic life and to ensure a sustainable drinking water supply;
- ways individual homeowners can limit water use, especially nonessential outdoor water use;
- a detailed description of the restrictions and penalties for violating the restrictions.

Notice that restrictions have been put in place shall be filed with the Department within 14 days of the restriction's effective date. Filing shall be in writing on the Water Use Restrictions Form at <http://www.mass.gov/dep/water/approvals/wmgforms.htm#conserve>.

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<sup>2</sup> Medway shall implement and enforce the restrictions on summer withdrawals for 2006 that are included in Attachment A.

Notice to customers and the Department need not be provided if Medway has already implemented water use restrictions that conform to the applicable restrictions and those restrictions are still in force.

Should the reliability of flow measurement at the Medway Gauge Station be so impaired as to question its accuracy, Medway may request the Department's review and approval for the trigger mechanism to be transferred to another gauge. The Department reserves the right to require use of a different gauge.

## **8. Water Withdrawals that Exceed Baseline Withdrawal Volumes**

Based upon Medway's withdrawals for calendar year 2005, Medway's baseline withdrawal rate is 0.99 MGD or 361.35 MGY (Baseline). Medway shall perform an Offset Feasibility Study the first time its water withdrawals for a calendar year exceed its Baseline, beginning with calendar year 2008. Medway shall report its water withdrawal volumes annually in its ASR.

If Medway is required to perform an Offset Feasibility Study (Study), Medway shall:

- within 60 days of the filing of an ASR indicating that a Study is required, submit a Study Scope of Work to DEP for approval;
- within 6 months of DEP's approval of the Study Scope of Work, submit the completed Study to DEP for approval;
- DEP's approval of the Study Scope of Work and the completed Study will be presumed if DEP does not issue a written approval or denial of such submission within 60 days of the date submitted to DEP for approval.

If Medway files a subsequent ASR indicating that withdrawals for a calendar year again have exceeded its Baseline, then Medway shall:

- implement forthwith the results of the Study;
- document such implementation annually at the time it files its ASR; and
- continue to implement the results of the Study as long as withdrawals exceed Baseline.

## **9. Water Conservation Requirements**

At a minimum, Medway shall implement the following conservation measures forthwith and shall be in compliance with these measures on or before February 28, 2009, the permit expiration. The Department recognizes that Medway is currently implementing a number of these requirements. Compliance with the water conservation requirements shall be reported to the Department upon request or at the time of Permit Renewal unless otherwise noted below.

**Table 5: Minimum Water Conservation Requirements**

<b><u>System Water Audits and Leak Detection</u></b>	
1.	At a minimum, conduct a full leak detection survey every three years. The first full leak detection survey shall be completed no later than December 31, 2007.
2.	Perform a leak detection survey of the entire distribution system within one year whenever the percentage of unaccounted for water increases by 5% or more (for example an increase from 3% to 8%) over the percentage reported on the ASR for the prior calendar year. Within 60 days of completing the leak detection survey, Medway shall submit to the Department for its review a report detailing the leak detection survey, any leaks uncovered as a result of the survey or otherwise, dates of repair and the estimated water savings as a result of the repairs.

3.	Conduct field surveys for leaks and repair programs in accordance with the <u>AWWA Manual 36</u> .
4.	<p>Medway shall have repair reports available for inspection by the Department. Medway shall establish a schedule for repairing leaks that is at least as stringent as the following:</p> <ul style="list-style-type: none"> <li>- Leaks of three (3) gallons per minute or more shall be repaired as soon as possible, and no more than three (3) months after detection.</li> <li>- Leaks of less than three (3) gallons per minute at hydrants and appurtenances shall be repaired as soon as possible.</li> <li>- Leaks of less than three (3) gallons per minute shall be repaired in a timely manner, but in no event more than six (6) months from detection, except that leaks in freeway, arterial or collector roadways shall be repaired when other roadwork is being performed on the roadway.</li> </ul> <p>Leaks shall be repaired in accordance with Medway's priority schedule including leaks up to the service meter. However, in the event that the landowner is unwilling or unable to repair leaks between the property line and the service meter in accordance with Medway's schedule, Medway shall repair such leaks within seven (7) days of obtaining either: (1) the written consent of the landowner; or (2) a warrant authorizing access to the property to make the necessary repair. Medway shall exercise best efforts to obtain the written consent of the landowner or a warrant authorizing access to the property to make the necessary repair.</p>
5.	<p>Currently, Medway does not have a filtration system or water filtration facility. Meters before and after Medway's corrosion control system indicate a variation of +/- of 1 to 2%. If a filtration system is required in the future, the following requirement will be in effect.</p> <p>If the difference between the quantity of the raw water entering each treatment plant and the quantity of the finished water entering the distribution system from each treatment plant exceeds 5%, Medway shall submit to the Department for its review and approval a scope of work and schedule for conducting a water audit of the treatment plant by December 31<sup>st</sup> of the year following the exceedance. The scope of work for the water audit shall provide for a comprehensive evaluation of the operations of the treatment plant and include a schedule for completing the evaluation. Medway shall conduct the water audit in accordance with the scope of work and schedule approved by the Department. Within 60 days of completing the water audit of the treatment plant, Medway shall submit to the Department for its approval a report documenting the results of the water audit, the recommended actions to save water during the treatment process, and the schedule for implementing the recommended actions. Medway shall implement such actions as approved by the Department and in accordance with the schedule approved by the Department.</p>
<b><u>Metering</u></b>	
1.	Calibrate all source and finished water meters at least annually and report date of calibration on the ASR.
2.	Medway reports its system is 100% metered. All water distribution system users shall have properly sized service lines and meters that meet AWWA calibration and accuracy performance standards as set forth in <u>AWWA Manual M6 – Water Meters</u> , by the permit renewal date (March 1, 2009).
3.	Medway reports an ongoing program to inspect individual service meters to ensure that all service meters accurately measure the volume of water used by your customers. The metering program shall include regular meter maintenance, including testing, calibration, repair, replacement and checks for tampering to identify and correct illegal connections. The plan shall continue to include placement of sufficient funds in Medway's annual water budget to calibrate, repair, or replace meters as necessary.
<b><u>Pricing</u></b>	
1.	Establish a water pricing structure that includes the full cost of operating the water supply system by the next permit renewal (March 1, 2009). Evaluate rates every three to five years and adjust costs as needed. Full cost pricing factors all costs - operations, maintenance, capital, and indirect costs (environmental impacts, watershed protection) - into prices.
2.	Medway shall not use decreasing block rates. Decreasing block rates which charge lower prices as water use increases during the billing period, are not allowed by M.G.L. Chapter 40: Section 39L.
<b><u>Residential and Public Sector Conservation</u></b>	
1.	Medway shall meet the standards set forth in the Federal Energy Policy Act, 1992 and the

Massachusetts Plumbing Code.
2. Meter or estimate water used by contractors using fire hydrants for pipe flushing and construction.
<b>Industrial and Commercial Water Conservation</b>
1. Medway shall review the use records for its industrial, commercial and institutional water users and develop an inventory of the largest water users. Medway shall develop and implement an outreach program designed to inform and (where appropriate) work with its largest industrial, commercial and institutional water users on ways to reduce their water use by the next permit renewal (March 1, 2009). Such outreach plans can include, but are not limited to: information on water audits, meter sizing, water reuse, low-flow plumbing fixtures, mandatory outdoor water use restrictions, suggestions for contacting trade associations for process specific information on water use reductions, and information on contacting the Executive Office of Environmental Affairs Office of Technical Assistance for Toxics Use Reduction (OTA) which offers a range of assistance and information to help facilities improve water use efficiency and reduce wastewater discharge. OTA can be contacted at (617) 626-1060 or at <a href="http://www.mass.gov/envir/ota">www.mass.gov/envir/ota</a> .
2. Upon request by the Department, Medway shall report on industrial, commercial and institutional water conservation including the results of its review of water use records for industrial, commercial and institutional water users, the inventory of the largest water users, copies of any outreach materials distributed to industrial, commercial and institutional water users, and to the extent practical, a summary of water use reductions or savings that have resulted. Upon receipt of this report, the Department will take whatever action it deems appropriate to promote the interests of the Water Management Act, including without limitation requiring the Town to take additional actions to reduce industrial, commercial and institutional water use.
<b>Lawn and Landscape</b>
1. Medway is expected to fully implement its Water Use Restriction Bylaw as a condition of this permit.
<b>Public Education and Outreach</b>
1. Develop and implement a Water Conservation Education Plan. Medway's Water Conservation Education Plan shall be designed to educate Medway's water customers of ways to conserve water. Without limitation, Medway's plan may include the following actions: <ul style="list-style-type: none"> <li>• Include in bill stuffers and/or bills, a work sheet to enable customers to track water use and conservation efforts and estimate the dollar savings;</li> <li>• Public space advertising/media stories on successes (and failures);</li> <li>• Conservation information centers perhaps run jointly with electric or gas company;</li> <li>• Speakers for community organizations;</li> <li>• Public service announcements; radio/T.V./audio-visual presentations;</li> <li>• Joint advertising with hardware stores to promote conservation devices;</li> <li>• Use of civic and professional organization resources;</li> <li>• Special events such as Conservation Fairs;</li> <li>• Develop materials that are targeted to schools with media that appeals to children, including materials on water resource projects and field trips; and</li> <li>• Make multilingual materials available as needed.</li> </ul>
2. Upon request of the Department, Medway shall report on its public education and outreach effort, including a summary of activities developed for specific target audiences, any events or activities sponsored to promote water conservation and copies of written materials.

#### 10. **Requirement to Report Raw and Finished Water Volumes**

Medway does not currently have a filtration treatment system. Should treatment be added to the system, Medway shall report annually on its ASR the raw water volumes and finished water volumes for the entire water system and the raw water volumes for individual water withdrawal points.

### **General Permit Conditions (applicable to all permittees)**

No withdrawal in excess of 100,000 gallons per day over the registered volume (if any) shall be made following the expiration of this permit, unless before that date the Department has received a renewal permit application pursuant to 310 CMR 36.00.

1. **Duty to Comply** The permittee shall comply at all times with the terms and conditions of this permit, the Act and all applicable State and Federal statutes and regulations.
2. **Operation and Maintenance** The permittee shall at all times properly operate and maintain all facilities and equipment installed or used to withdraw water so as not to impair the purposes and interests of the Act.
3. **Entry and Inspections** The permittee or the permittee's agent shall allow personnel or authorized agents or employees of the Department to enter and examine any property for the purpose of determining compliance with this permit, the Act or the regulations published pursuant thereto, upon presentation of proper identification and an oral statement of purpose.
4. **Water Emergency** Withdrawal volumes authorized by this permit are subject to restriction in any water emergency declared by the Department pursuant to MGL c 21G ss 15-17, MGL c 150 ss 111, or any other enabling authority.
5. **Transfer of Permits** This permit shall not be transferred in whole or in part unless and until the Department approves such transfer in writing, pursuant to a transfer application on forms provided by the Department requesting such approval and received by the Department at least thirty (30) days before the effective date of the proposed transfer. No transfer application shall be deemed filed unless it is accompanied by the applicable transfer fee established by 310 CMR 36.37.
6. **Duty to Report** The permittee shall complete and submit annually, on a form provided by the Department, all of the information required by said form including, without limitation, a certified statement of the withdrawal. Such report shall be received by the Department by the date specified on the form each year. Such report must be mailed or hand delivered to:

Department of Environmental Protection  
Drinking Water Program  
Water Management Program  
One Winter Street, 6th Floor  
Boston, MA 02108

7. **Duty to Maintain Records** The permittee shall maintain withdrawal records and other information in sufficient detail to demonstrate compliance with this permit.
8. **Metering** All withdrawal points included within the permit shall be metered within one year of the date of issuance of the permit. Meters shall be maintained and replaced as necessary to ensure the accuracy of the withdrawal records.

### **APPEAL RIGHTS AND TIME LIMITS**

This permit is a decision of the Department. Any person aggrieved by this decision may request an adjudicatory hearing under the provisions of MGL c 30A. Any such request must be made in writing, by

certified mail and received by the Department within twenty-one (21) days of the date of receipt of this permit. No request for an appeal of this permit shall be validly filed unless a copy of the request is sent by certified mail or delivered by hand to the local water resources management official in the city or town in which the withdrawal point(s) is located; and for any person appealing this decision, who is not the applicant, unless such person notifies the permit applicant of the appeal in writing by certified mail or by hand within five (5) days of mailing the appeal to the Department.

### **CONTENTS OF HEARING REQUEST**

310 CMR 1.01(6)(b) requires the request to include a clear and concise statement of the facts which are the grounds for the request and the relief sought. In addition, the request must include a statement of the reasons why the decision of the Department is not consistent with applicable rules and regulations, and for any person appealing this decision who is not the applicant, a clear and concise statement of how that person is aggrieved by the issuance of this permit.

### **FILING FEE AND ADDRESS**

The hearing request, together with a valid check, payable to the Commonwealth of Massachusetts in the amount of \$100 must be mailed to:

Commonwealth of Massachusetts  
Department of Environmental Protection  
P.O. Box 4062  
Boston, MA 02211

The request shall be dismissed if the filing fee is not paid, unless the appellant is exempt or granted a waiver as described below.

### **EXEMPTIONS**

The filing fee is not required if the appellant is a city or town (or municipal agency), county, district of the Commonwealth of Massachusetts, or a municipal housing authority.

### **WAIVER**

The Department may waive the adjudicatory hearing filing fee for any person who demonstrates to the satisfaction of the Department that the fee will create an undue financial hardship. A person, seeking a waiver must file, together with the hearing request, an affidavit setting forth the facts, which support the claim of undue hardship.



## **Appendix A – Residential Gallons Per Capita Day**

### **I. Compliance Plan Requirement**

If Medway fails to document compliance with the RGPCD performance standard in its 2008 ASR, or in any ASR thereafter, then Medway must file with that ASR a Residential Gallons Per Capita Day Compliance Plan (RGPCD Plan) which shall:

- a. meet the requirement set forth below in Section II;
- b. include measures to be implemented to meet the performance standard); and
- c. include the schedule for implementing such measures.

The filing of a RGPCD Plan shall not constitute a return to compliance, nor shall it affect the Department's authority to take action in response to Medway's failure to meet the performance standard.

If a RGPCD Plan is required, Medway must:

- a. submit information and supporting documentation sufficient to demonstrate compliance with its RGPCD Plan annually at the time it files its ASR; and
- b. continue to implement the RGPCD Plan until it complies with the performance standard and such compliance is documented in Medway's ASR for the calendar year in which the standard is met.

### **II. Contents of a Residential Gallons Per Capita Day Compliance Plan**

At a minimum, all RGPCD Compliance Plans must include a detailed:

- a. description of the actions taken during the prior calendar year to meet the performance standard;
- b. analysis of the cause of the failure to meet the performance standard;
- c. description and schedule of the actions that will be taken to meet the performance standard; and
- d. analysis of how the actions described in c. will address the specific circumstances that resulted in the failure to meet the performance standard.

RGPCD Plans may be amended to revise the actions that will be taken to meet the performance standard. Amended RGPCD Plans must include the information set forth in paragraph above.

At a minimum, all RGPCD Plans for failure to meet the RGPCD performance standard must include implementation of at least one of the following residential conservation programs:

- a. a program that provides water saving devices such as faucet aerators and low flow shower heads at cost;
- b. a program that provides rebates or other incentives for the purchase of low water use appliances (washing machines, dishwashers, and toilets); or
- c. the adoption and enforcement of an ordinance, bylaw or regulation to require the installation of moisture sensors or similar climate related control technology on all automatic irrigation systems.

If Medway is already implementing one or more of these programs, it must include in its RGPCD Plan the continued implementation of such program(s), as well as implementation of at least one additional program. All programs must include a public information component designed to inform customers of the program and to encourage participation in the program.

Without limitation, RGPCD Plans for failure to meet the RGPCD performance standard may include the following actions in addition to those outlined in the paragraph above:

- a. the use of an increasing block water rate or a seasonal water rate structure as a tool to encourage water conservation;
- b. a program that provides rebates or other incentives for the installation of moisture sensors or similar climate related control technology on automatic irrigation systems;
- c. the adoption and enforcement of an ordinance, bylaw or regulation to require that all new construction include water saving devices and low water use appliances;
- d. the adoption and enforcement of an ordinance, bylaw or regulation to require that all new construction minimize lawn area and/or irrigated lawn area, maximize the use of drought resistant landscaping, and maximize the use of top soil with a high water retention rate;
- e. the implementation of a program to encourage the use of cisterns or rain barrels for outside watering; and
- f. the implementation of monthly or quarterly billing.

## **Appendix B – Unaccounted for Water**

### **I. Compliance Plan Requirement**

If Medway fails to document compliance with the UAW performance standard in its 2008 ASR, or in any ASR thereafter, then Medway must file with that ASR an Unaccounted for Water Compliance Plan (UAW Plan) which shall:

- a. meet the requirements set forth below in Section II;
- b. include measures to be implemented to meet the performance standard; and
- c. include the schedule for implementing such measures.

The filing of a UAW Plan shall not constitute a return to compliance, nor shall it affect the Department's authority to take action in response to Medway's failure to meet the performance standard.

If a UAW Plan is required, Medway must:

- a. submit information and supporting documentation sufficient to demonstrate compliance with its UAW Plan annually at the time it files its ASR; and
- b. continue to implement the UAW Plan until it complies with the performance standard and such compliance is documented in Medway's ASR for the calendar year in which the standard is met.

### **II. Contents of an Unaccounted for Water Compliance Plan**

Medway has the choice to file a UAW Plan with measures tailored to the specific needs of its water supply system (Individualized UAW Plan) or a UAW Plan that includes Best Management Practices (BMP UAW Plan).

At a minimum, all UAW Plans must include a detailed:

- a. description of the actions taken during the prior calendar year to meet the applicable performance standard;
- b. analysis of the cause of the failure to meet the performance standard;
- c. description and schedule of the actions that will be taken to meet the performance standard; and
- d. analysis of how the actions described in c. will address the specific circumstances that resulted in the failure to meet the performance standard.

UAW Plans may be amended to revise the actions that will be taken to meet the performance standard. Amended UAW Plans must include the information set forth in the paragraph above.

#### **Individualized UAW Compliance Plan**

Without limitation, Individualized UAW Compliance Plans for failure to meet the UAW performance standard may include any of the actions set forth in the BMP UAW Compliance Plan below.

#### **BMP UAW Compliance Plan**

At a minimum, all BMP UAW Plans for failure to meet the UAW performance standard must include all of the following actions:

- a. within one year of filing the UAW Plan, complete a water audit and leak detection survey of the entire system and submit completed audit and survey to the Department;

- within one year of completing the audit and leak detection survey, conduct sufficient repairs to reduce by 75% (by water volume) all leaks detected in the survey; and  
within one year of completing such repairs, conduct additional repairs of leaks detected in the survey as may be necessary to reduce permittee's UAW to 10% or less;
- b. implementation of a program that ensures the inspection and evaluation of all water meters and, as appropriate, the repair, replacement and calibration of water meters in accordance with the following schedule:
    - Large Meters (2" or greater) - within one year of filing the BMP UAW Plan
    - Medium Meters (1" or greater and less than 2") - within two years of filing the BMP UAW Plan
    - Small Meters (less than 1") - by the next permit renewal (March 1, 2009);
  - c. implementation of monthly or quarterly billing by the next permit renewal (March 1, 2009); and
  - d. within one year of filing the UAW Plan, implementation of a water pricing structure that achieves sufficient revenues to pay the full cost of operating the system including, without limitation, the costs of repairs under paragraph a., the costs of meter repairs, replacements and calibrations under paragraph b., the costs of employees and equipment, and ongoing maintenance and capital costs.

## **Appendix C – Summer Limits on Withdrawals**

### **I. Nonessential Outdoor Water Use**

As stated in Special Condition 7, in Water Management Act permits, “nonessential outdoor water use” includes uses that are not required:

- a. for health or safety reasons;
- b. by regulation;
- c. for the production of food and fiber;
- d. for the maintenance of livestock; or
- e. to meet the core functions of a business.

Examples of **nonessential** outdoor water uses include:

- irrigation of lawns,
  - except by means of a hand-held hose outside the hours of 9AM and 5PM;
- washing of vehicles other than by means of a commercial car wash,
  - except as necessary for operator safety; and
- washing of exterior building surfaces, parking lots, driveways or sidewalks,
  - except as necessary to apply paint, preservatives, stucco, pavement or cement.

Examples of **acceptable** outdoor water uses outside the hours of 9 AM and 5 PM include:

- irrigation to establish a new lawn during the months of May and September;
- irrigation for the production of food and fiber or the maintenance of livestock;
- irrigation by plant nurseries as necessary to maintain stock;
- irrigation by golf courses as necessary to maintain tees and greens only; and
- irrigation of public parks and recreational fields.

### **II. Accessing Mean Daily Streamflows for the Medway Gauge Via the USGS Website**

The USGS Streamflow website default shows Massachusetts streamflows in real time, i.e., the most recent periodic reading made at each USGS stream gauge. This real-time data can vary widely over the course of a day and is not used to trigger the Water Management Permit Summer Limits on Withdrawals.

To trigger the Summer Limits on Withdrawals, the Department relies on the mean daily streamflows. The mean daily cannot be calculated until after midnight each day when USGS computes the periodic data into a mean daily streamflow.

To find the mean daily streamflow at the Medway Gauge:

1. Go to <http://waterdata.usgs.gov/ma/nwis/current/?type=flow> and scroll down to the Charles River Basin listings. Double click on 01103280 Charles River at Medway, MA;
2. The “Available data for this site” box at the top of the page will indicate “Real-time”. Use the drop down menu arrow in the box and click on “Recent daily”;
3. Scroll down to the “Available Parameters/Output format/Days” table. In the “Output format” column use the drop down menu arrow and click on “Table”, then click on “get data”;
4. Scroll down to the “Date/Streamflow/Precipitation” table. The column labeled “Streamflow (ft<sup>3</sup>/s) (DD02) (Mean)” shows recent mean daily streamflow values in cfs for the Medway Gauge.

**Attachment A**  
**Town of Medway Summer Water Use Restrictions**

1. Beginning no later than **APRIL 1** of each year, a mandatory odd/even watering restriction will be in effect until the restriction in Section 2. (below) go into effect. Odd numbered houses may water Monday, Wednesday and Friday. Even numbered houses may water Tuesday, Thursday and Saturday. No watering will be allowed on Sunday.

You may water between the hours of 4:00 PM and 8:00 AM. **Watering is limited to 60 minutes.**

Washing of personal vehicles and filling of pools is permitted on a limited basis.

Newly seeded lawns may be watered daily for the first two (2) weeks, after which they will be watered following the odd/even schedule. New lawns must be planted no later than June 1, 200X.

2. **Beginning no later than June 15 of each year there will be no use of sprinkler/irrigation systems. Hand watering only will be allowed. This restriction will be in place until October 1 of each year.**

Violators are subject to the following fines after notification:

1 <sup>st</sup> Offence	\$50.00
2 <sup>nd</sup> Offence	\$100.00
Subsequent Offences	\$100.00
Repeat Offenders	Termination of Service until in Compliance

The Medway Water Department requests everyone reduce water usage. To comply with MassDEP requirements, we must conserve water and use it wisely. Please use the following tips to reduce water usage.

- Water plants only when needed.
  - Lawns are healthiest when kept longer (2 ½ to 3 inches tall) and watered thoroughly only once or twice a week. Do not water grass more than twice a week.
  - Do not wash down sidewalks or driveways.
  - Wash clothes and dishes only when machines are full.
  - Wash vehicles at Car Washes (they recycle the water).
  - Restaurants should only serve glasses of water when requested.
  - Use rain barrels to collect water for gardens.
- The Water Department has 30-gallon poly drums available for free

Thank you for your cooperation  
Medway Board of Water/Sewer Commissioners